

ANNUAL INSECT SURVEY AND CONTROL REPORT OF THE LASSEN VOLCANIC NATIONAL  
PARK      SEASON OF 1934

WALTER C. HALE  
LASSEN VOLCANIC NATIONAL PARK, CALIF.  
OCTOBER 31, 1934

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ANNUAL INSECT SURVEY AND CONTROL REPORT

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SEASON 1934

by

WALTER C. HALL

Lassen Volcanic National Park  
Mineral, California.  
October 31, 1934.



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Introduction. The location of the two CCG camps, one at Old Boundary Springs, the second one at the Sulphur Works, with "spike" camps one at Butte Lake and one at Warner Valley, resulted in considerable insect control work in the different camp grounds and roadside areas throughout the park. This work was done in connection with a project set aside in the CCG program. This control work has been done intermittently throughout the season, thereby destroying broods that normally would have emerged and attacked other trees before the usual fall control methods would be in operation. It therefore appears that this type of labor, in the manner in which it has been employed, is to be highly recommended.

General Insect Conditions. The insect condition of the park is in a rather low normal endemic condition, with a lower mortality in the Jeffery pine and lodgepole pine areas than last year undoubtedly due to the efficient control work done last fall by Mr. Augustine. There were only a few scattered, infested trees close to the old centers of last year.

The infestation of the fir engraver beetles and the Sierra fir beetles was considered for the first time in the park. It was found that only the area of fir that was badly infested with mistletoe (*Hemlock*) was infested with the fir engraver beetle and the Sierra fir beetle in large enough numbers to be considered.

In the area on either side of the Loop Highway from the head of the Lower Kings Meadows to Manzanita Lake the red fir is very badly infested with this mistletoe—probably about 90% to 95%. In this area the fir engraver and Sierra fir beetles are playing quite a roll in completing the mortality of these trees. In the other areas of the park where the mistletoe is not a problem the infestation of beetles is at a low ebb.

I. Manzanita Lake area. The cover type of the Manzanita camp ground area is Jeffery pine. In this area there were no infested trees found but, in the latter of August and the first of September several trees were noted being attacked with the turpentine beetle (*Dendroctonus valens* Lec.).

In a small pure lodgepole pine stand 100 yds. north of



Reflection Lake there was considerable slash left from last year's CCC activities in construction work. This was infested badly with pine engraver beetles, Ips sps. Four of the standing trees had been infested.

There were two new fall infested lodgepole pine trees in front of the new ranger-naturalist house on the east end of Reflection Lake infested with Ips sps. This infestation took place due to the weakened condition of the trees, which were badly injured at the time the house was constructed.

At the west end of Manzanita Lake and south of the checking station, two Jeffery pine were located which were infested with Ips sps. and (Dendroctonus jeffreyi Hopk.).

The infestation is endemic, being slighter than last year's infestation. The area covered was approximately 280 acres. Control was carried out by felling the trees and peeling the bark, which was then exposed to the sun.

II. Loop Highway from Manzanita Lake to Hat Creek This Area has a cover type of Jeffery pine and red fir with some white pine through the Chaos Lava Beds. A strip four and one half chains was covered on either side of the road from Manzanita Lake to Hat Creek for insect infested trees.

There were four red fir trees infested with the fir engraver beetle (Scolytus ventralis Lec.) and the Sierra fir beetle (Tetropium abietis Fall.). Four Jeffery pine trees, three of which were winter wind falls, were badly infested with Jeffery pine beetle (Dendroctonus jeffreyi Hopk.), and Ips sps., and Ips emarginatus Lec.). These were treated early in the summer, some time in June.

There were approximately 560 acres covered. The method of treating was felling the trees, then peeling and burning the bark of the Jeffery pine. The firs were peeled and burned with the fall roadside cleanup burning crew.

III. Hat Creek to Summit Lake and Summit Lake Campground Area The cover type of the forest extending from Hat Creek to Summit Lake is red fir with lodgepole pine in pure stands in the meadows. A strip four and one half chains on each side of the road and Summit Lake campground area was covered for insect infested trees. There were 320 acres



surveyed during July 25 and August 4 intermittently.

In this area the fir is practically all infected with mistletoe and there were found twenty-five red fir infected with the fir engraver beetle (Scolytus ventralis Lec.) and the Sierra fir beetle (Tetropium abietis Fall.). Also there were four lodgepole pine attacked with beetles. The primary beetle attacking was Ips spp. with a small number of white pine beetle (Dendroctonus monticolae Hopk.).

The cause of the attack of the large number of red fir by the fir beetle is the weakened condition of the trees that are suffering from the effect of the mistletoe parasite.

The control work was carried on by the CCC men at the same time that the roadside clean up work was being done. The trees were peeled and later burned after the first snow, which fell in September.

IV. Butte Lake Campground and Roadside Area. The cover type of Butte Lake campground area has Jeffery pine predominating, with yellow pine intermittent, and a small group of lodgepole pine at the west end of the lake. On the road leading north from Butte Lake the cover type changes, yellow pine predominating.

This area is endemic. There were two infested lodgepole pines, one in the horse corral at the west end of the lake and campground and one spring windfall lodgepole pine just outside of the horse corral which were infested with Ips spp. almost entirely. On either side of the road a four and one half chain strip was omitted to the park boundary, with the result that five yellow pine trees and three Jeffery pine trees were found infested. The beetle attacking the yellow pine was the yellow pine beetle (Dendroctonus brevicornis Lec.) and those attacking the Jeffery pine were the large western engraver beetle (Ips emarginatus Lec.) and the Jeffery pine beetle (Dendroctonus jeffreyi Hopk.).

The cruise of this area was made on August 2 and control was finished in August by the CCC men. The yellow pine trees were peeled and the bark pit burned while the Jeffery pine and the lodgepole pine were just peeled. The total acreage was approximately 200 acres.

V. Snag Lake, Grassy Lake, and Twin Lakes. Snag Lake, Grassy Lake, and Twin Lakes, a lodgepole type area, was surveyed when Dr. K. A. Salmen was in the park on July 16. This area was found to be in a very light endemic state and there seemed to be a lighter infestation than the previous year.

There was no control work done in this area.



VI. Hat Creek and Badger Flat Area. There was only one lodgepole pine tree in the Hat Creek and Badger Flat area which was infested and this tree had been strip killed years previously. The survey of this region was made in July.

There was no control work carried on in this area.

VII. Juniper Lake Area. There was no survey or control work done in this area this year.

VIII. Warner Valley and Campground Area. The cover type of the Warner Valley area is Jeffery and yellow pine mixed with white fir and lodgepole pine in the meadows. An area of about 20 acres was covered for infested trees in the four and one half chain strip on either side of the road and in the campground area. There were found four white fir, one yellow pine, and two Jeffery pine. The white fir was infested with the western fir engraver beetle (Scolytus ventralis Lec.). and the Sierra fir beetle (Tetropium abietis Fall.), while the yellow and Jeffery pine were attacked with their respective beetles.

The control was done by CCC men. The trees were burned with the fall burning.

IX. Park Headquarters Area. The Headquarters area cover type is yellow pine and has an area of 80 acres. There were seven infested trees, attacked by the western yellow pine beetle (Dendroctonus brevicornis Lec.).

These trees were treated by peeling and burning the bark.

Respectfully submitted,

*Walter C. Hale*

Walter C. Hale



COST TABLE

AREA											COST PER		
	JP	PP	LP	RF	Total	JP	PP	LP	RF	Total	Tree	M.B.M.	Total
Manzanita Lake	2	0	6	0	8	221	0	18	0	239			
Loop Highway Manzanita Lake to Hat Creek	4	0	0	4	8	1787	0	383	0	2170	11.09	7.59	843
Hat Creek to Summit Lake	0	0	4	26	29	0	0	77	3272	3349			
Butte Lake	2	5	2	0	9	444	936	76	0	1456			
Warner Valley	2	1	0	4	7	341	153	0	297	791			
Headquarters	0	7	0	0	7	0	2252	0	0	2252	11.01	3.08	155
TOTALS	10	13	12	33	68	2793	3341	554	3569	10257			798

Average cost per tree in man days.....12.408

Average cost per M. B. M..... 8.01

The above cost does not consider the foreman's time which was five days for spotting.

FIELD NOTES

Mansanita Lake

No.	Species of tree	Dbh	Ht. Log	Species insect	Insect stage
North of Marlection Lake:					
1	L. P.	10	1	Ips sp.	Adults Larvae pupa
2	"	12	1	" "	" " "
3	"	8	1	" "	" " "
4	"	10	1	" "	" " "
Ranger Naturalist House:					
1	L. P.	10	1	Ips Sps.	Adults Eggs Larvae
2	"	12	1	" "	" " "
Ranger Station:					
1	J. P.	20	4	Dj & Ips sp.	Adults Eggs Larvae
2	"	30	5	" " "	" " "

Loop Highway Mansanita Lake to Hot Creek

1	R. P.	34	5	Sv. & Ts. "	Larvae
2	J. P.	36	6	Dj & Ips sp.	Larvae pupa
3	R. P.	20	5	Sv. & Ts.	Larvae
4	J. P. "	54	7	Dj. Ips Sps.	Larvae
5	J. P. "	52	7	Ips emarginatus	Pupa
				" " "	"
6	J. P. "	54	7	" " "	"
				" " "	"
7	R. P.	30	6	Sv. & Ts.	Larvae
8	R. P.	28	5	" "	"

Hot Creek to Summit Lake and Campground Area

1	R. P.	30	5	Sv. & Ts.	Larvae
2	"	28	5	" "	"



Field Notes

(continued)

3	RF	18	2	Sv. & Ta	Larvae
4	"	16	2	" "	"
5	"	36	5	" "	"
6	"	44	6	" "	"
7	"	12	2	" "	"
8	"	8	0	" "	"
9	"	26	4	" "	"
10	"	48	7	" "	"
11	"	42	6	" "	"
12	"	24	4	" "	"
13	"	22	4	" "	"
14	"	30	5	" "	"
15	"	28	5	" "	"
16	"	20	3	" "	"
17	"	12	2	" "	"
18	"	40	6	" "	"
19	"	36	6	" "	"
20	"	34	5	" "	"
21	"	26	4	" "	"
22	LP	18	3	Ips sps. & Da	Adult Larvae
23	"	14	2	" " "	" "
24	RF	22	4	Sv. & Ta.	Larvae
25	"	18	3	" "	"
26	"	24	2	" "	"
27	"	54	6	" "	"
28	LP	22	4	Ips sps. & Da.	Adult Larvae
29	"	10	2	" " "	" "

Butte Lake Area

1	LP	22	4	Ips sps. &	Adult Larvae
2	"	20	4	" "	" "
3	PP	58	7	Ob.	Larvae



Field Notes

(continued)

4	PP	28	4	Db.	Larvae
5	"	22	3	"	"
6	JP	48	7	Ips Sm. & Dj. Dv	Adult Larvae
					Pupa
7	PP	20	4	Db.	Larvae
8	JP	18	2	Ips sps. Dj	Adult Egg Larvae
9	PP	30	6	Db.	Larvae

Hat Creek Badger Flat

1	LP	24	4	Im. & Ips sps.	Larvae (strip killed)
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Warner Valley Area

1	PP	32	6	Db	Larvae
2	JP	20	5	SV. & Ta.	"
3	"	30	5	" "	"
4	JP	40	7	Dj	"
5	PP	18	4	SV. & Ta.	"
6	JP	24	4	Dj.	"
7	PP	32	5	SV. & Ta	"

Headquarters Area

1	PP	36	6	Db	Larvae
2	"	48	8	"	"
3	"	40	7	"	"
4	"	46	8	"	"
5	"	32	6	"	"
6	"	34	8	"	"
7	"	46	8	"	"



1934 ANNUAL FOREST INSECT REPORT

Park Lassen Volcanic Ranger District Entire Park  
 Date of Field Survey Intermittent July to October Time spent on survey About 10 days to 2 weeks  
 (5 day special survey made with Dr. K. A. Salmon, Bur. Ent., Aug. 1 to 5)  
 Method employed (general observations, sample strip, topographic)

General observation, roadside strip.

What is the general situation in your district? Light endemic state in Lodgepole and Jeffrey Pine. Normal endemic in Red Fir

If there are any special areas where insect losses are now serious or threaten to become so, answer the following questions, using additional forms if more than one special area is reported:

Along Loop Highway, Summit

Name of area affected Lake to Kings Cr. Mdw. No. acres 400

Timber type Red Fir Range in elevation 6800 to 7000

Tabulate below your estimate of the number of trees that died from insect attack on this area during the past season:

Tree Species	Mature Trees	Second Growth	Reproduction
<u>Red Fir</u>	<u>50</u>	<u>25</u>	<u>25</u>
<u>Lodgepole</u>	<u>8</u>	<u>0</u>	<u>0</u>
_____	_____	_____	_____
_____	_____	_____	_____

Do the dying trees occur singly or in groups? Singly

Give average number of trees in group \_\_\_\_\_

Are the losses increasing, decreasing, or about the same as last year? \_\_\_\_\_

Apparently there is a slight increase in the red fir.

What insects appear to be responsible for the damage (barkbeetles, borers, defoliators, unknown)? Bark beetles

Remarks: Narrative portion of Insect Survey and control report, submitted Oct. 31, is attached and gives detailed information, regarding above Red Fir infestation and other areas.

Approved October 31, 34 (date) Submitted October 22, 1934 (date)

Park Supt. Lynne W. Collins By C. E. Gilbert (name)  
 (signature) and Walter C. Hale, Foreman (title)

(NOTE: Please supplement this outline with a detailed report of any important infestations.)



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308-819

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The cruise of this area was made on August 2 and control was finished in August by the CCC men. The yellow pine trees were peeled and the bark pit burned while the Jeffrey pine and the lodgepole pine were just peeled. The total acreage was approximately 260 acres.

5. Snag Lake, Grassy Lake, and Twin Lakes. Snag Lake, Grassy Lake, and Twin Lakes, a lodgepole type area, was surveyed when Dr. K. A. Salman was in the park on July 18. This area was found to be in a very light endemic state and there seemed to be a lighter infestation than the previous year.

There was no control work done in this area.



6. Hat Creek and Badger Flat Area. There was only one lodgepole pine tree in the Hat Creek and Badger Flat area which was infested and this tree had been strip killed years previously. The survey of this region was made in July.

There was no control work carried on in this area.

7. Juniper Lake Area. There was no survey or control work done in this area this year.

8. Warner Valley and Campground Area. The cover type of the Warner Valley area is Jeffrey and yellow pine mixed with white fir and lodgepole pine in the meadows. An area of about 90 acres was covered for infested trees in the four and one half chain strip on either side of the road and in the campground area. There were found four white fir, one yellow pine, and two Jeffrey pine. The white fir was infested with the western fir engraver beetle (Scolytus ventralis Lec.) and the Sierra fir beetle (Tetropium abietis Fall.), while the yellow and Jeffrey pine were attacked with their respective beetles.

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These trees were treated by peeling and burning the bark.

Respectfully submitted,

October 31, 1934

Approved: Oct. 31, 1934

Walter C. Hale  
Forestry Foreman, ECW

Park  
Supt. Lynne W. Collins